



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/503,676	02/14/2000	Michael Joseph Johnson	RAL9-99-0124	7028

25299 7590 10/29/2003

IBM CORPORATION  
PO BOX 12195  
DEPT 9CCA, BLDG 002  
RESEARCH TRIANGLE PARK, NC 27709

EXAMINER
----------

WON, YOUNG N

ART UNIT	PAPER NUMBER
----------	--------------

2155

DATE MAILED: 10/29/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Pr4

# Office Action Summary

Application No.

09/503,676

Applicant(s)

JOHNSON, MICHAEL JOSEPH

Examiner

Young N Won

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Amended claims 1-27 have been examined, claim 28 has been cancelled, and new claims 29-47 have been examined.
2. Claims 1-27 and 29-47 are pending with this action.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucher et al. (US 6226680 B1).

**INDEPENDENT:**

As per claims 1, 2, 6, 10, 11, 15, 19, 20, and 24, Boucher teaches of a network having a sending computer system and a receiving computer system, each of the sending and receiving computer systems including a processor (see Fig.1, #28), a memory (see Fig.1, #35 and col.5, lines 9-14) and a network adapter (see col.5, line 2),

the memory containing a data structure used for storing a common data buffer (see col.5, lines 9-14), a method (see col.3, line 41), system (see col.3, lines 35-36), and a computer readable medium containing a computer program (see col.1, lines 31-34 and col.2, lines 29-31), for sending and receiving payload data by layers or sub-layers of at least one communications protocol (see col.3, lines 41-45), the method comprising the steps of: (a) storing a first start pointer pointing to a first byte of the payload data in a first common data buffer of the sending computer system (see col.19, lines 36-45); (b) adding a first header to the payload data in the first common data buffer at a location preceding the byte pointed to by the first start pointer according to a first protocol layer of the communications protocol at the sending computer system (see col.2, lines 35-54 and col.6, lines 28-32); (c) adjusting the first start pointer to point to a first byte of the first header (see col.6, lines 29-32 and col.19, lines 36-45); (d) invoking a send procedure of a second and lower protocol layer of the communications protocol at the sending computer system (see col.2, lines 49-54); (e) transferring to the second protocol layer the start pointer by the send procedure (see col.6, lines 28-32), wherein the payload data is not copied in preparation for or during the send procedure (see col.3, lines 56-64; col.5, lines 32-37; and col.9, lines 36-52); (f) adding a second header to the payload data in the first common data buffer at a location preceding the first start pointer (see col.2, lines 35-54 and col.6, lines 28-32); (g) sending the payload data and the first and second headers to the receiving computer system (see col.3, lines 40-49 and col.5, lines 37-42); (h) storing the payload data and the first and second headers in a second common data buffer of the receiving computer system (see col.5, lines 32-37

and col.7, lines 26-27); (i) invoking a receive procedure of a second protocol layer of the communications protocol at the receiving computer system (see col.6, line 12 to col.7, line 5); (j) storing a pointer and end pointer to the payload data and also storing a second start pointer pointing to a first byte of the second header in the second common data buffer (see col.19, lines 36-45); (k) adjusting a the second start pointer to point to the first byte of the first header according to the second protocol layer at the receiving computer system (see col.6, lines 29-32 & 60-64); (l) invoking a receive procedure of a first and higher protocol layer of the communications protocol at the receiving computer system (see col.6, line 12 to col.7, line 5); and (m) transferring to the first protocol layer at the receiving computer system the second start pointer (see col.2, lines 55-60 and col.6, line 33 col.7, line 5), wherein the payload data is not copied in preparation for or during the receive procedure (see col.3, lines 56-64; col.5, lines 32-37; and col.9, lines 36-52).

Boucher further teaches that the transmitting and receiving are performed in opposite fashion (see col.1, lines 40-42; col.2, lines 55-60; and col.3, lines 45-49). In other words, the steps of transmitting are opposite the steps of receiving which Boucher specifically teaches. Although Boucher teaches of overcoming the deficiencies of prior art of "avoiding the delays and pitfalls of conventional software layer processing, such as repeated copying and interrupts" (see col.3, lines 57-59) by processing "on the fly" so that all "protocol headers for a packet can be processed without copying, moving or storing the data between protocol layers" (see col.9, lines 41-43), he does not teach that the system still processes the headers in the conventional way of adding headers to the

Art Unit: 2155

payload data while traveling through the layers, but such step and means are well known in the art (see col.2, lines 19-60). Therefore, it would have been obvious to a person of ordinary skill in the art to employ the teachings of known prior method and means within the system of Boucher by adding headers through the layers because Boucher teaches still teaches of processing all headers for a packet as referenced above.

As per claims 29, 38, and 39, Boucher teaches a method, a system, and a computer readable medium containing a computer program for processing payload data in a computer system using layers of a network communications protocol (see col.1, lines 17-20), the method, system and program comprising the steps of: (a) storing the payload data in a data buffer (see col.5, lines 37-42 and col.7, lines 26-27); (b) processing the payload data using a first protocol layer of the network communications protocol (see col.2, lines 35-60); and (c) processing the payload data using a second protocol layer of the network communications protocol (see col.6, line 12 to col.7, line 5), wherein the payload data is not copied during and between being processed by the first and second protocol layers (see col.3, lines 56-64; col.5, lines 32-37; and col.9, lines 36-52).

DEPENDENT:

As per claims 3, 12, and 21, Boucher further teaches wherein a checksum is added to the header in the common data buffer preceding the payload data being sent (see col.8, line 67 to col.9, line 3).

As per claims 4, 13, and 22, Boucher further teaches wherein the transferring step includes any application data or information required by the send procedure of the second and lower protocol layer (see col.2, lines 35-54; and col.11, lines 27-42).

As per claims 5, 14, and 23, Boucher teaches of further comprising the step of (f) adjusting a size of the payload data to be sent by the second and lower protocol layer by adjusting the end pointer (see col.1, lines 60-63 and line 66 to col.2, line 3).

As per claims 7, 16, and 25, Boucher further teaches wherein a checksum following the header and added by the sending computer system is removed from the received payload data in the common data buffer (see col.7, lines 21-24).

As per claims 8, 17, and 26, Boucher further teaches wherein the checksum is removed by adjusting the start pointer of the common data buffer to point to a memory location following the checksum (see col.7, lines 21-27).

As per claims 9, 18, and 27, Boucher teaches of further comprising the step of (m) transferring any application data or information required by the receive procedure of the first and higher protocol layer (see col.6, line 54 to col.7, line 5).

As per claims 30 and 40, Boucher further teaches wherein the payload data does not move within the data buffer during and between being processed by the first and second protocol layers (see col.3, lines 56-64; col.5, lines 32-37; and col.9, lines 36-52).

As per claims 31 and 41, Boucher further teaches wherein the processing step (a) further comprises the steps of (a2) positioning a first pointer to point to a first byte of the payload data; and (a3) positioning a second pointer to point to a last byte of the payload data, wherein the first protocol layer uses the first and second pointers to locate

the payload data for processing (see claim 1 rejection above; col.10, lines 18-30; and col.19, lines 36-41).

As per claims 32 and 42, Boucher further teaches wherein the processing step (b) further comprises the steps of: (b2) adding a first element to the payload data; and (b3) moving the second pointer to point to a last byte of the first element, wherein the first pointer does not move when the first element is added (see claim 1 rejection above; col.10, lines 18-30; and col.19, lines 36-41).

As per claims 33 and 43, Boucher further teaches wherein the processing step (c) further comprises the steps of (c2) adding a second element to the payload data; and (c3) moving the second pointer to point to a last byte of the second element, wherein the second protocol layer uses the first and second pointers to locate the payload data and the first element to add the second element, wherein the first pointer does not move when the second element is added (see claim 1 rejection above; col.10, lines 18-30; and col.19, lines 36-41).

As per claims 34 and 44, Boucher further teaches wherein the first element comprises a header associated with the first protocol layer (see col.2, lines 39-41).

As per claims 35 and 45, Boucher further teaches wherein the first element comprises a checksum associated with the first protocol layer (see col.6, lines 33-37 and col.8, line 67 to col.9, line 3).

As per claims 36 and 46, Boucher further teaches wherein the second element comprises a header associated with the second protocol layer (see col.2, lines 42-44).



As per claims 37 and 47, Boucher further teaches wherein the second element comprises a checksum associated with the second protocol layer (see col.6, lines 33-37 and col.8, line 67 to col.9, line 3).

### ***Response to Remarks***

4. In response to the first argument regarding the differences of the teachings of Boucher in versus the claimed invention, please see claim 1 motivation. Also, Boucher clearly teaches the element of not copying the payload data for or during the send and receive procedure.

In response to the second argument regarding Boucher teaching payload data being copied, specifically column 2, lines 51-54, Boucher is clearly teaching what is known and employed in the art. That reference location was specified to teach the limitations of the steps of headers being added as the data is traveled through the layers in preparation for transmission, which is well known and currently employed in the art.

Applicant's arguments with respect to the Isfeld reference have been considered but are moot in view of the new ground(s) of rejection.

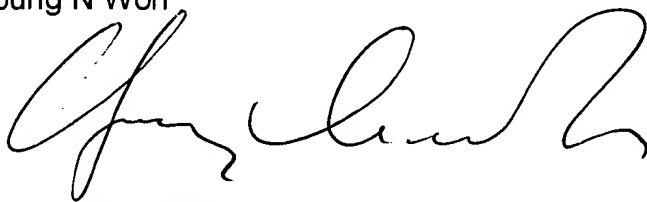
Similarly, new claims 29-47 have been rejected since Boucher clearly suggests or teaches the element of "wherein the payload data is not copied in preparation for or during the send procedure" and "receive procedure".

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Young N Won whose telephone number is 703-605-4241. The examiner can normally be reached on M-Th: 8AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Young N Won



October 27, 2003



**HOSAIN ALAM**  
**SUPERVISORY PATENT EXAMINER**